PATENT SPECIFICATION

1,026,887

DRAWINGS ATTACHED

1,026,887

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Int. Cl.:—B 62 d

COMPLETE SPECIFICATION

Instrument Panels for Road Vehicles

We, JOSEPH LUCAS (INDUSTRIES) LIMITED of Great King Street, in the City of Birmingham, 19, a British Company, do hereby declare the invention, for which we pray that a Patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to instrument panels for motor vehicles and has for its object to provide a panel in a convenient form.

An instrument panel for a motor vehicle in accordance with the present invention comprises a box-like structure having a base and side walls, means within the structure for supporting instruments and controls therein, electrical connector means for connection between at least some of the instruments and controls and printed circuits on the base or on a part secured thereto, and further connector means for connection of the printed circuits to wiring in the vehicle, and a detachable front panel closing the front of the structure, through which the instruments and controls can be viewed or operated as the case may be.

A specific example of the invention will now be described with reference to the accompanying drawings in which:

Figure 1 is a front view of the instrument panel,

Figure 2 is a front view with the front panel removed,

Figure 3 is a cross-sectional view on the line III—III in Figure 1,

Figure 4 is a cross-sectional view on the line IV—IV in Figure 1, and

Figure 5 is a cross-sectional view on the line V—V in Figure 1.

The instrument panel shown comprises a box-like structure having a base 10 and integral side walls 11, forming an enclosure the front of which is closed by a detachable panel 12. This is secured to the flanged side walls 11 by screws 13. The structure and front panel are both moulded from a synthetic resinous material.

Extending from the base 10 are a plurality of integral posts 14 and webs 15 which serve as supports for a plurality of instruments and controls. These may be held in place by screws, as for instance in the examples of the knurled wheel operated switch 16 in Figure 3, the key operated switch 17 in Figure 4, the "push" button operated switch 18 in Figure 5, or the electrical instrument 19 in Figure 5.

Alternatively, in the case of an instrument, this may be at least partially held in place by the front panel 12. Examples of this are the instruments 20 and 21 in Figures 3 and 4 respectively. The front panel 12, in this example, is formed from a transparent material which is rendered opaque by painting except in regions corresponding to the faces of instruments, or lamps, such as the lamp 22 in Figure 5, to be viewed. In the latter case, the appropriate portion of the front panel may be tinted if required. The transparent regions, as well as holes in the front panel through which controls, such as the switches referred to, are accessible, are surrounded by raised portions 23 which, in some instances carry metal bezel rings 24.

On the rear face of the base 10 of the structure is a printed circuit board 25 the electrical switches and instruments having spring-loaded contacts (such as the contacts 29) which are urged against the printed circuit board and extend for this purpose through openings in the base 10 of the structure. An instrument such as the speedometer 21 which requires a mechanical connection with a transmission cable 26 has this connection made through the base 10 of the structure, as shown in Figure 4.

As an alternative to the contact of a switch or electrical instrument with an appropriate portion of the printed circuit board 25, the latter has a socket 27 into which a pin 28

on the instrument or control fits. An example of this is the instrument 20 in Figure 3.

The printed circuit board 25 includes suitable electrical connectors (not shown) for attachment to the wiring of the vehicle. The printed circuit board 25 is detachable from the base of the structure so that the structure can be removed from the vehicle, for servicing without disturbing the connections between the vehicle wiring and the printed circuit board 25.

It will be appreciated that with this arrangement it is possible to dispense with separate casings for individual instruments, these casings being constituted by the webs 15 which surround an instrument mechanism. However, if desired, encased instruments may be secured in the structure and may be provided with a separate glass and bezel which is fixed in an aperture in the front panel. Furthermore, some instruments or controls may be mounted on the front panel and are provided with suitable connections with the printed circuit board 25.

It will be appreciated that whilst in the example described, the printed circuits are on a separate board secured to the bse of the structure, these circuits may be printed directly on the base. In this case, it is convenient for the base to be removable from the box-like structure. In such a case, the posts and webs would be moulded with the side walls of the structure.

WHAT WE CLAIM IS:—

1. A motor vehicle instrument panel comprising a box-like structure having a base and side walls, means within the structure for supporting instruments and controls therein, electrical connector means for connection between at least some of the instruments and controls and printed circuits on the base or on a part secured thereto, and further connector means for connection of the printed circuits to wiring in the vehicle, and a detachable front panel closing the front of the structure, through which the instruments and controls can be viewed or operated as the case may be.

2. A motor vehicle instrument panel according to claim 1 in which the means for supporting the instruments and controls comprises plurality of posts or webs formed integrally with the box-like structure.

3. A motor vehicle instrument panel according to claim 2 in which there are webs which serve to enclose a mechanism of an instrument.

4. A motor vehicle instrument panel according to any one of the preceding claims in which the connector means includes at least one pin and socket connection between the base and an instrument or control, to achieve an electrical connection, the pin or socket on the base being electrically connected to the printed circuit.

5. A motor vehicle instrument panel according to any one of the preceding claims in which an instrument or control having a mechanical connection to a transmission means in the vehicle has the mechanical connection at or extending through the base of the structure.

6. A motor vehicle instrument panel according to any one of the preceding claims in which the front panel is formed from a transparent material of which portions other than those through which instruments or controls are to be viewed, are rendered opaque.

7. A motor vehicle instrument panel according to any one of the preceding claims in which an instrument or control is attached to the front panel and carries connector means thereon whereby it can be connected to the printed circuits when the front panel is assembled on the box-like structure.

8. A motor vehicle instrument panel substantially as hereinbefore described with reference to and as shown in the accompanying drawings.

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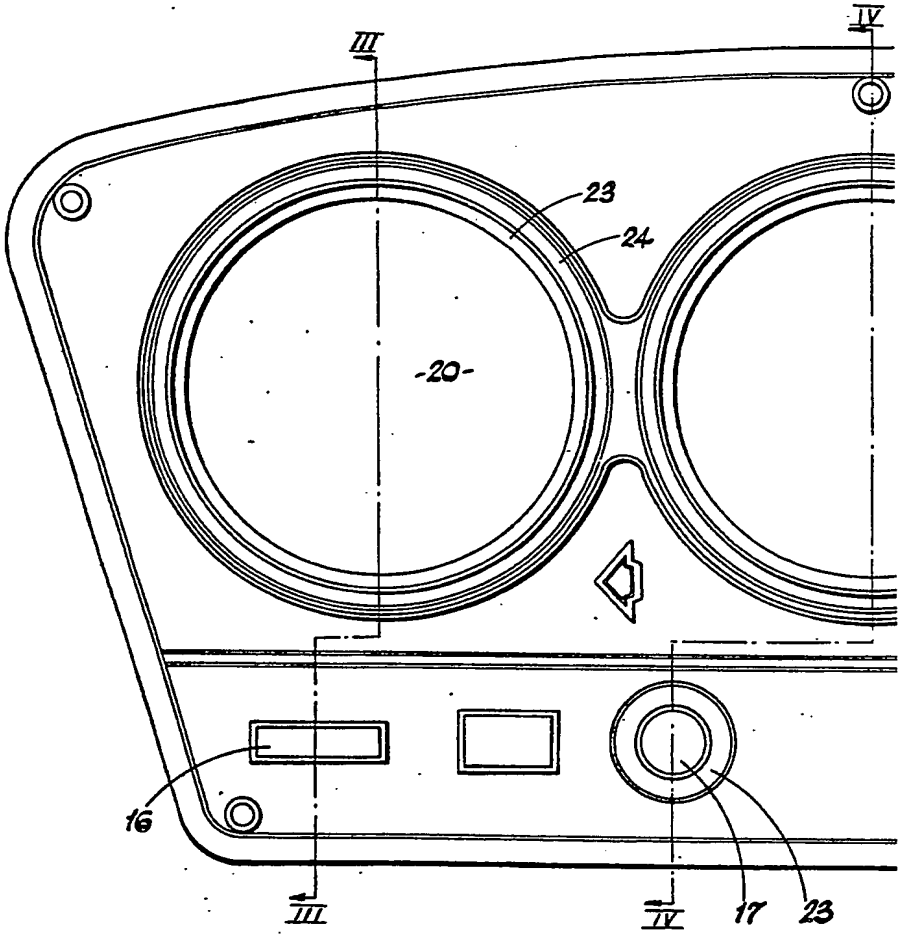
III
IV
23
24
-20-
16
III
IV
17
23

1026887 COMPLETE SPECIFICATION

3 SHEETS *This drawing is a reproduction of the Original on a reduced scale*

Sheet 1

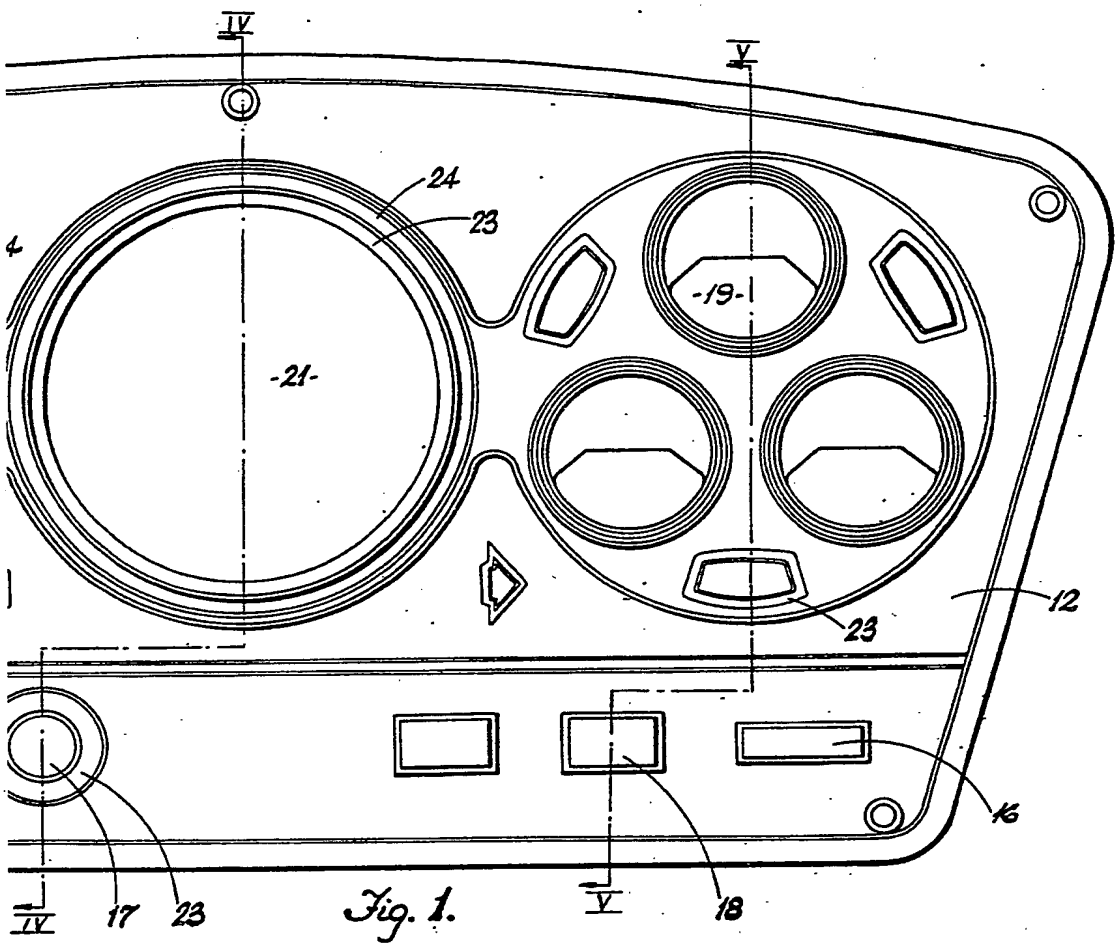

Fig. 1.

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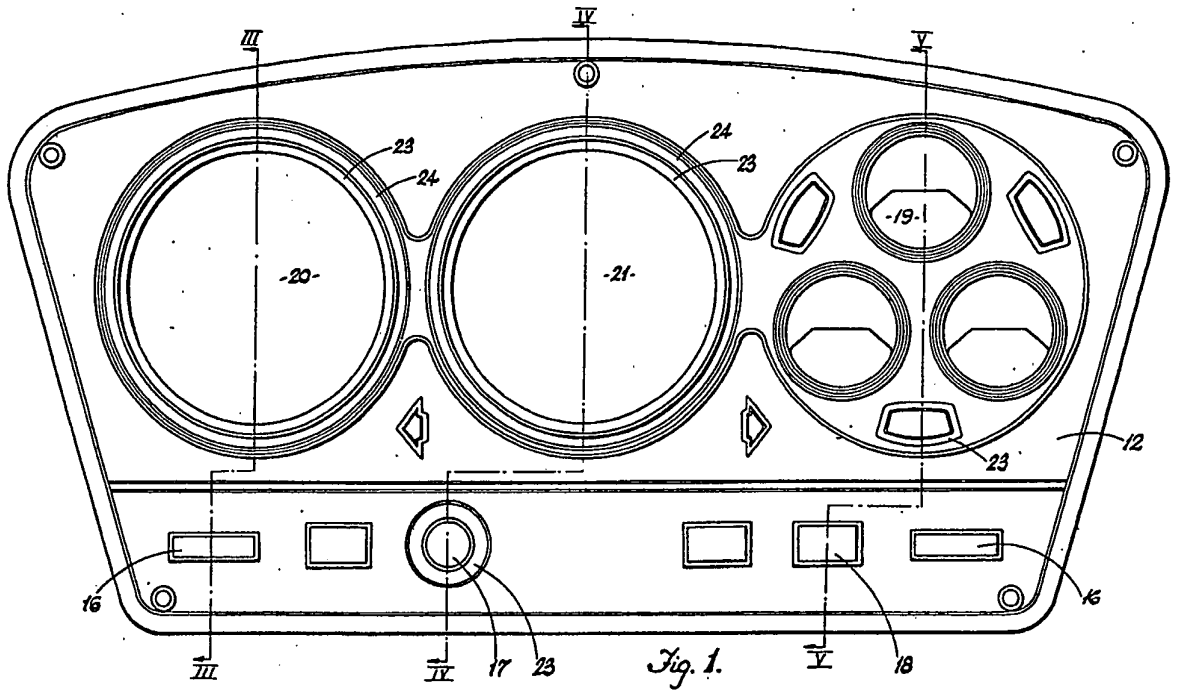
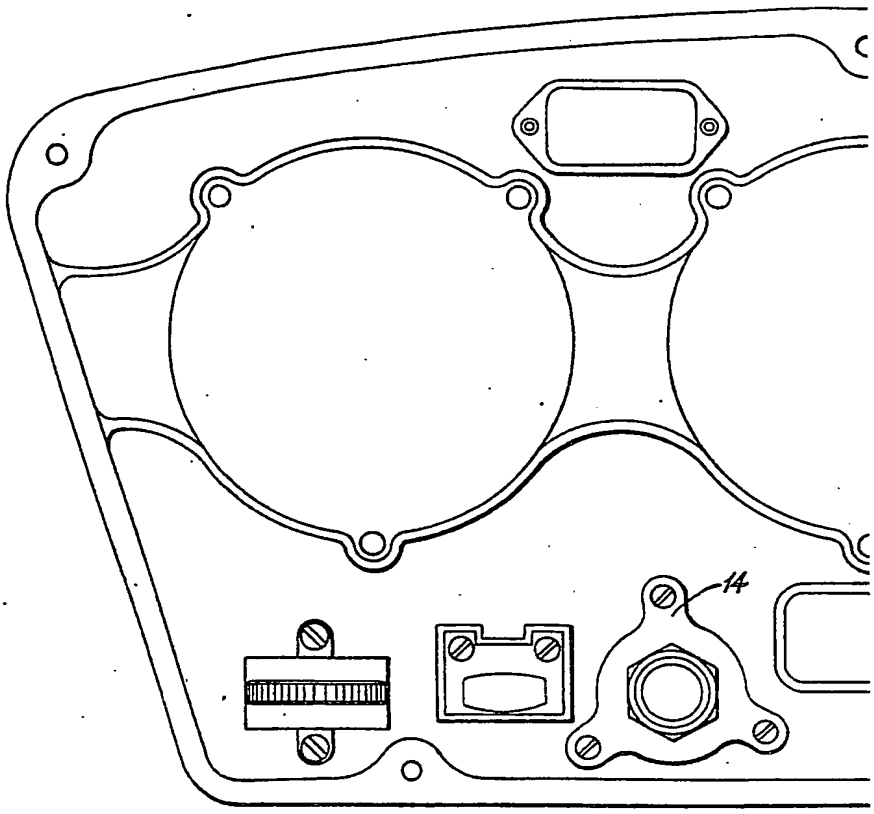


Fig. 1.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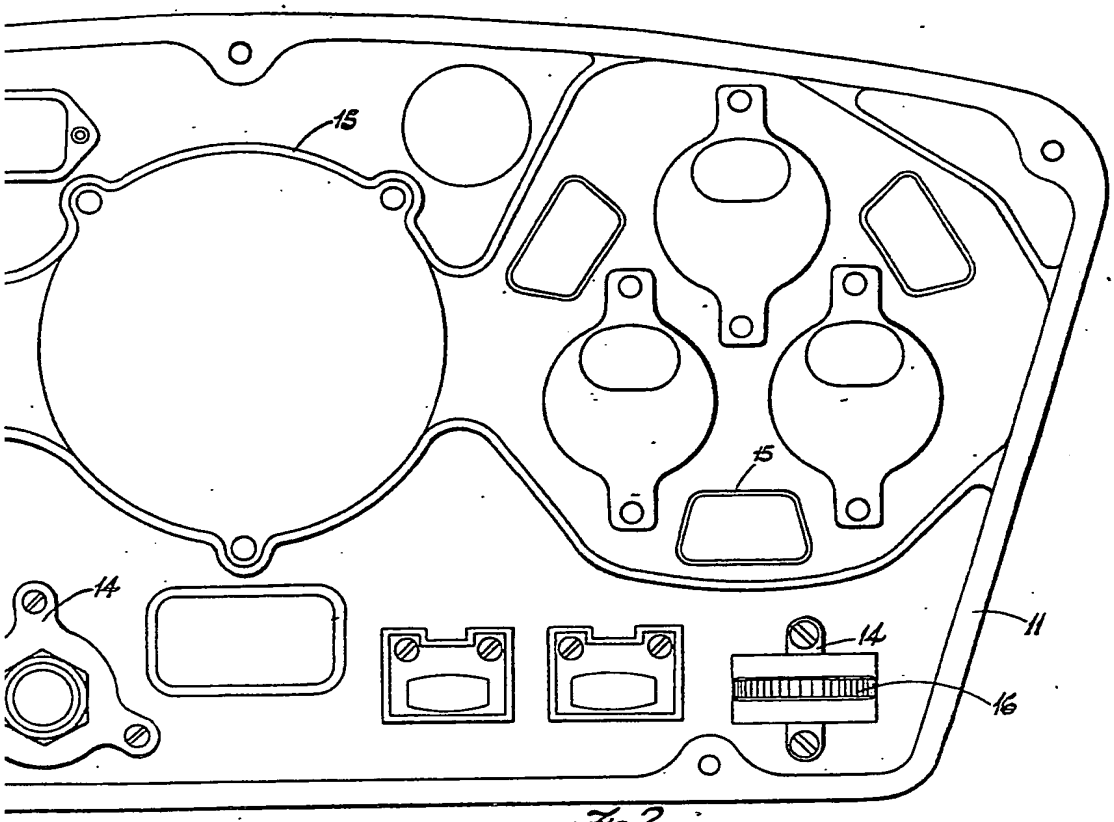

Fig 2.

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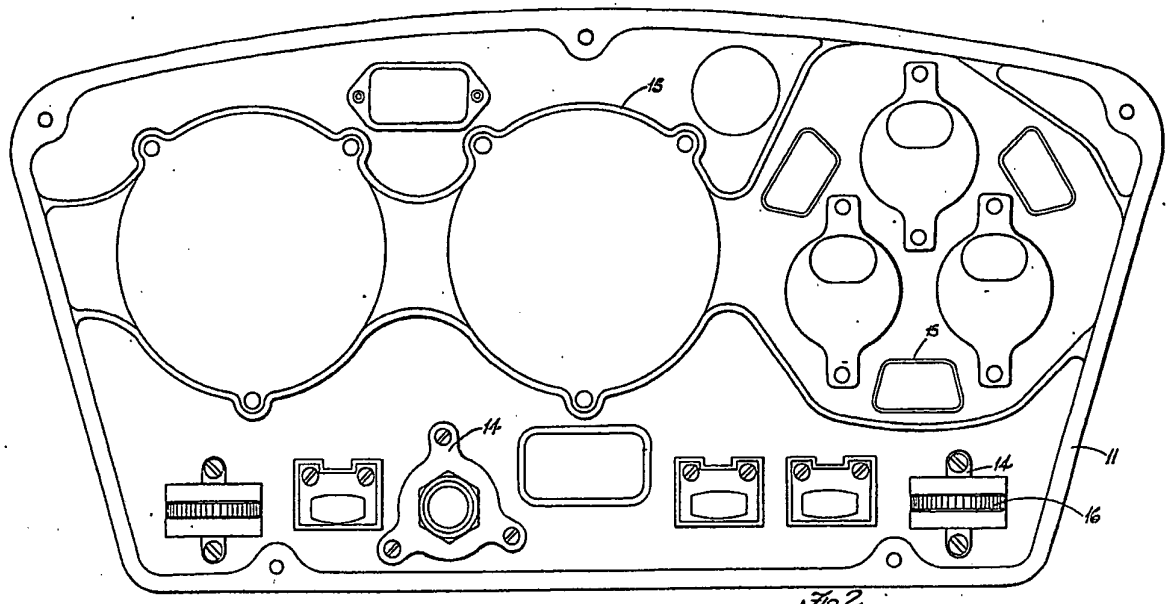

Fig 2.

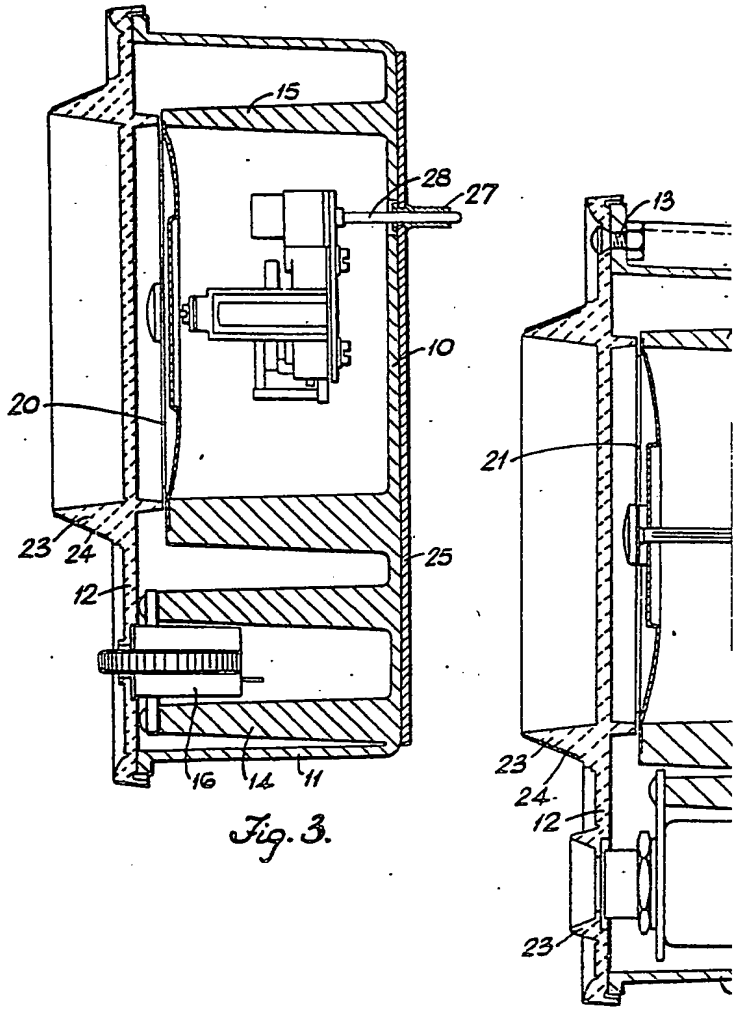

Fig. 3.

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Sheet 3

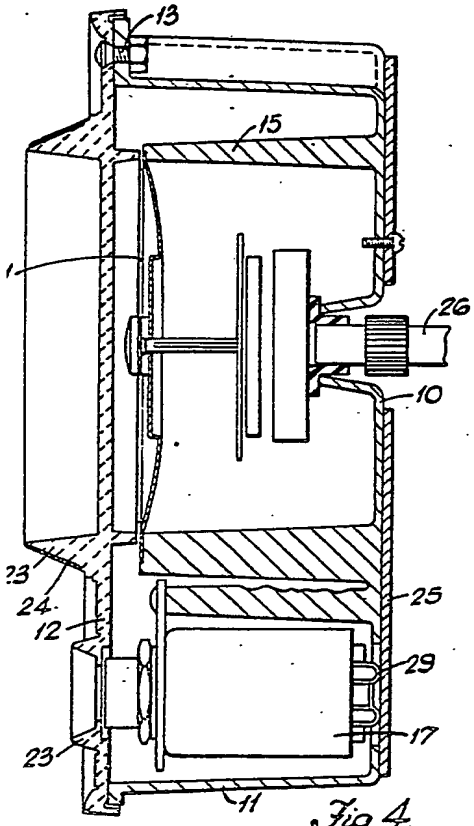

Fig. 4.

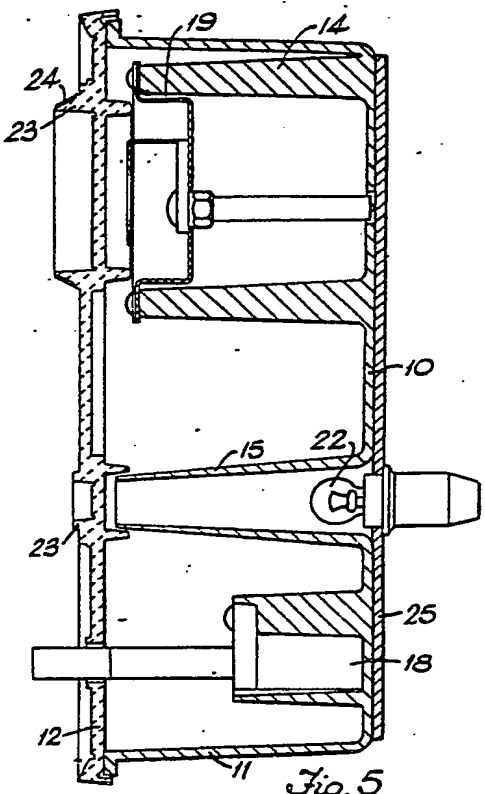

Fig. 5

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Sheet 3

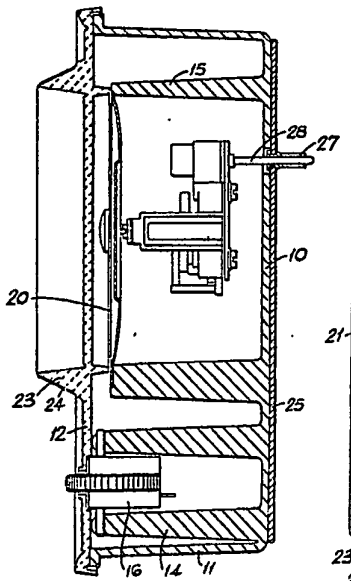

Fig. 3.

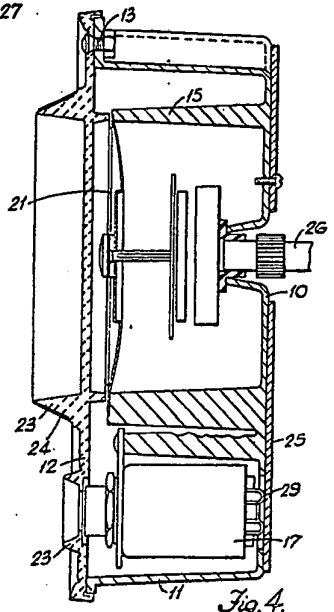

Fig. 4.

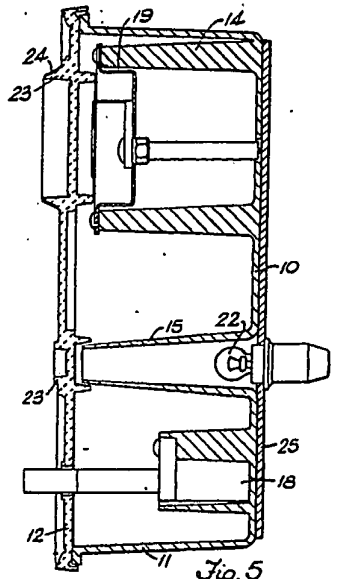

Fig. 5